

UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF DIETETICS & HUMAN NUTRITION
MAIN EXAMINATION: JUNE 2013
SUBJECT, COURSE & CODE: RESEARCH METHODS: DIETETICS &
HUMAN NUTRITION (DIET311)

DURATION: 2 HOURS

TOTAL MARKS: 100

External Examiner: Dr. M. Faber
Internal Examiner: Mrs. S.M. Kassler

NOTE: THIS PAPER CONSISTS OF (4) PAGES AND NO ANNEXURE.
PLEASE SEE THAT YOU HAVE THEM ALL.

INSTRUCTIONS:

1. All questions are compulsory
2. Start each question on a new page
3. Leave a line open between sub-questions i.e. 1.1 and 1.2
4. Answer questions and sub-questions in sequence

QUESTION ONE

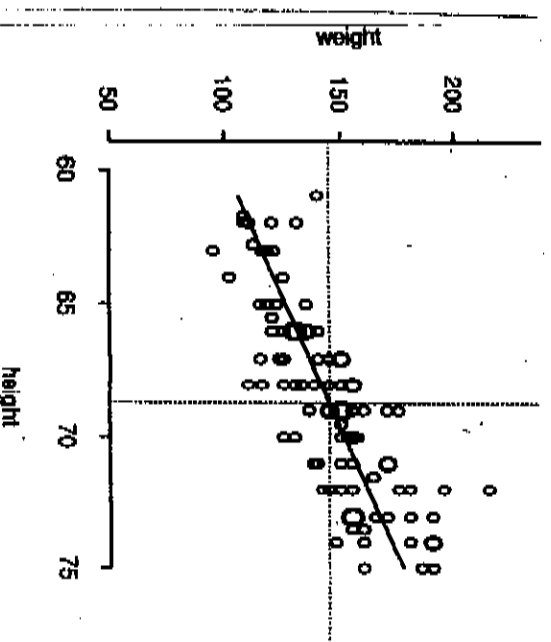
TOTAL 15 MARKS

You are conducting a lecture on randomized controlled trials. Outline the contents of your presentation.

QUESTION TWO

TOTAL 17 MARKS

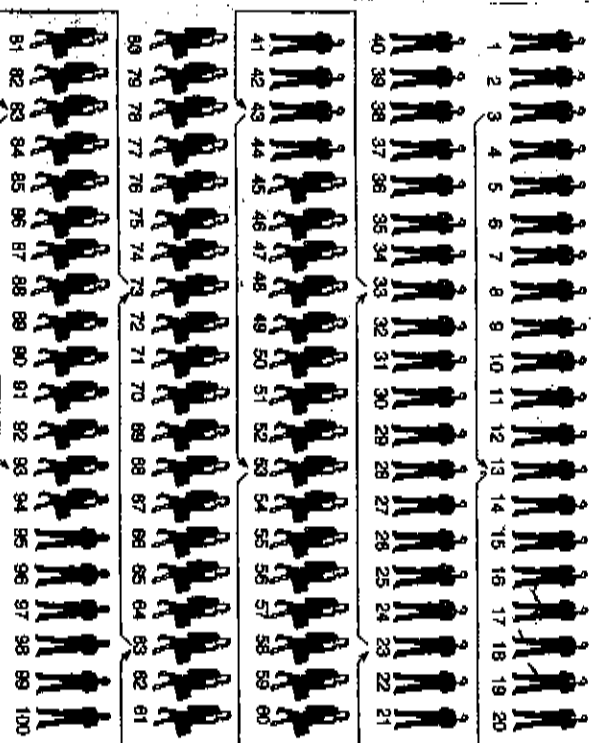
Study the following figure and answer the questions that follow:



- 2.1 Identify: (1)
 - 2.1.1 The type of graph. (1)
 - 2.1.1 The name of the line. (1)
 - 2.1.3 The name of the statistical test that is used to determine the angle of the line. (1)

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- 2.1.4 Are there outliers in the data (1)? Justify your answer. (1) (2)
- 2.1.5 If yes, identify two possible reasons why outliers are present in the current data set. (2)
- 2.2 Identify the sampling technique illustrated by the following figure taken from Weisman & Kruger (1999, p59). (3)



- 2.3 Study the abstract by Read et al. (2008) entitled: “The effect of supplementation with a probiotic *Lactobacillus reuteri* on the incidence and duration of lung infections in cystic fibrosis patients” and answer the questions that follow:

Objectives/scope: To determine whether supplementation with a probiotic *Lactobacillus reuteri* reduces the incidence and duration of lung infections in cystic fibrosis (CF) patients.

Methods: Twenty three CF patients (6–31 years) from the Kwazulu-Natal CF clinics started the study although only 16 completed it. The study was a randomised, double blind, placebo controlled crossover trial with six months on placebo and six months on probiotic. Forced expiratory volume in 1 second (FEV₁) and forced vital capacity (FVC) were measured, sputum collected and a symptom diary completed over the 12 month period.

Results: Compliance was poor. Most took 50% of the required daily dose of *L. reuteri*. Probiotic supplementation showed a slight (non significant) trend to improve FEV₁ and FVC, while no significant difference could be seen in the number and duration

of the lung infections. Sputum analysis showed a non significant trend towards the probiotic reducing the number of bacteria in the sputum. There was a significant reduction of symptoms for fever, running nose, sore throat and ear ache while on placebo.

Conclusion: Due to a small sample size and poor compliance no firm conclusions could be drawn. However a slight (non significant) improvement could be seen in favour of the probiotic for FEV₁, FVC, and sputum analysis. Although all other findings were not significantly different it would be of benefit to carry out further investigation across centres with a larger sample size and measures to improve compliance with the probiotic to see if the parameters set out above could be improved.

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- 2.3.1 Explain what is meant by a “randomized, double blind, placebo controlled crossover trial”. (4)
- 2.3.2 Critique the study conducted by Read et al. (2008) by briefly discussing its limitations. (3)

QUESTION THREE

TOTAL 29 MARKS

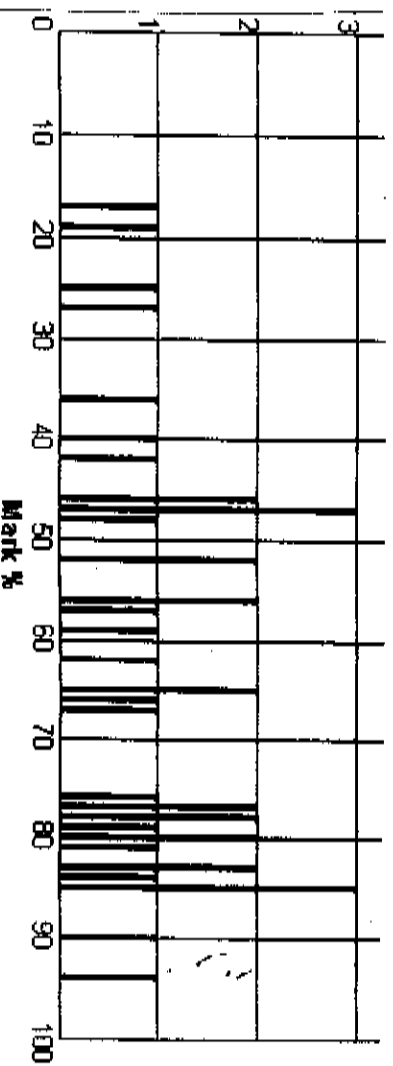
- 3.1 When submitting a research proposal to an ethics committee for approval, outline the aspects that the ethics committee will assess before awarding a study ethics clearance. (20)
- 3.2 Identify and discuss what is meant by the abbreviation SD. (4)
- 3.3 Give 5 reasons why a published study could be viewed as a credible source of reference by the scientific community. (5)

QUESTION FOUR

TOTAL 39 MARKS

- 4.1 Compile guidelines for conducting a systematic review. (10)
- 4.2 You are doing your masters and plan on collecting dietary intake data via a telephone survey. You need to convince your supervisor that this is a reliable and valid method. Discuss the argument you will present to your supervisor. (12)
- 4.3 In the March 2012 edition of the South African Journal of Clinical Nutrition, a case study on Treacher Collins syndrome was published and featured a four month old female patient. Give your opinion on merit (or lack thereof) for publishing case studies in peer reviewed journals. (3)

- 4.4 Refer to the following histogram and answer the questions that follow:

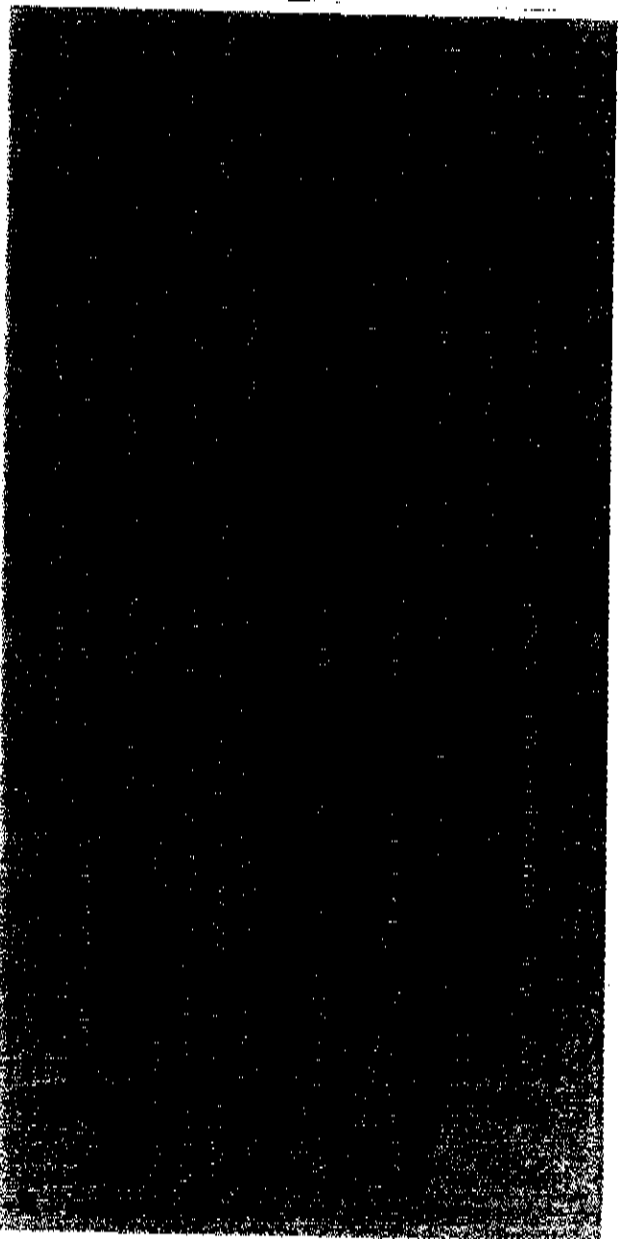


Count=41 Minimum=17 Maximum=94 Range=77
 Mean=61.93 Median=65. Mode=47,85 Peak=3

- 4.4.1 How many subjects were in the sample? (1)

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- 4.4.2 What was the highest mark obtained? (1)
- 4.4.3 Explain what is meant by the mean, median and mode respectively. (3)
- 4.5 Study the abstract by Pillay et al. (2009) entitled "Dietary intake and metabolic control of children aged six to ten with type 1 diabetes mellitus in KwaZulu-Natal" and answer the questions that follow:



- 4.5.1 Identify the study design as well as the disadvantages associated with this study design. (5)
- 4.5.2 Discuss the advantages and disadvantages associated with the method used to gather dietary intake. (4)